

Problem Solving

Self Assessment Rubric

Rubrics for student self-assessment for Problem Solving (Grades 6-8)

Problem solving is the process of overcoming constraints or limiting conditions that are in the way of pursuing goals.

A. I identify a goal.

4. I identify a goal that reflects careful and thorough consideration of the key elements of the situation.
3. I identify a goal that reflects consideration of the key elements of the situation.
2. I identify a goal that reflects a cursory consideration of the key elements of the situation.
1. I make little effort to identify a goal.

B. I identify constraints or limiting conditions.

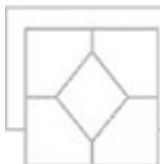
4. I identify, in a highly detailed manner, constraints or limiting conditions that are clearly related to the goal; in addition, I identify constraints or limiting conditions that are not immediately apparent. I thoroughly justify how these conditions are obstacles.
3. I identify constraints or limiting conditions that are related to the goal. I justify how these conditions are obstacles.
2. I identify constraints or limiting conditions that are not. I attempt to justify how the conditions are obstacles, but I do so in an incomplete or confusing manner.
1. I identify elements as constraints or limiting conditions that are not related to the goal. I make little effort to justify how the conditions are obstacles.

C. I determine exactly how the constraints or limiting conditions are in the way of achieving the goal.

4. I explain, in a highly detailed, accurate, and insightful manner, how the constraints or limiting conditions are in the way of achieving the goal in a way that reflects an in-depth, thorough understanding of the situation.
3. I accurately explain how the constraints or limiting conditions are in the way of achieving the goal in a way that reflects a basic understanding of the situation.
2. I explain how the constraints or limiting conditions are in the way of achieving the goal in a way that reflects some confusion about the situation.
1. I explain how the constraints or limiting conditions are in the way of achieving the goal in a way that reflects significant confusion about the situation.

D. I identify different ways of overcoming the constraints or meeting the limiting conditions

4. I identify creative but plausible ways of overcoming the constraints or meeting the limiting conditions that address the constraints or limiting conditions and that reflect an in-depth, thorough understanding of the situation.
3. I identify plausible ways of overcoming the constraints or meeting the limiting conditions that address the most important elements of the constraint or limiting conditions and that reflect a basic understanding of the situation.
2. I identify ways of overcoming the constraints or meeting the limiting conditions that address only some of the important elements of the constraints or limiting conditions and that may reflect some confusion about the situation.
1. I identify ways of overcoming the constraints or meeting the limiting conditions that probably will not help overcome the problem.



Problem Solving

- E. *I select and try out the alternative that appears to be the best.*
4. I engage in an effective, valid, and exhaustive trial of the selected alternative that goes beyond that required to solve the problem and that reflects an in-depth understanding of the situation.
 3. I engage in an effective and valid trial of the selected alternative that reflects an understanding of the situation.
 2. I engage in a trial of the selected alternative that reflect some confusion about the situation.
 1. I engage in an incomplete or ineffective trial of the selected alternative that reflects significant confusion about the situation.
- F. *I evaluate the effectiveness of the selected alternative.*
4. I thoroughly and in a highly detailed manner evaluate the effectiveness of the selected alternative from many different points of view and describe how the alternative overcomes the constraints or limiting conditions.
 3. I evaluate the effectiveness of the selected alternative and describe how the alternative overcomes the constraints or limiting conditions.
 2. I evaluate the effectiveness of the selected alternative in a cursory manner. I incompletely describe how the alternative overcomes the constraints or limiting conditions.
 1. I make little effort to evaluate the effectiveness of the selected alternative or to describe how the alternative overcomes the constraints or limiting conditions.
- G. *If appropriate, I try a different alternative or identify additional ways of overcoming the constraints or limiting conditions.*

As I try different alternatives, I may need to re-do any or all of the above steps. (Use the appropriate rubric for each step, as necessary.)

Adapted from McREL Institute